Potassium Nitrate
Safety Data Sheet

SECTION 1: Identification

1.1. Identification

Product form: Substance
Substance name: Potassium Nitrate
CAS-No.: 7757-79-1
Product code: LC19818
Formula: KNO3
Synonyms: niter / nitrate of potash / nitrate of potassium / nitre / nitric acid potassium salt / saltpeter / salpetre / vicknite

1.2. Recommended use and restrictions on use

Use of the substance/mixture: For laboratory and manufacturing use only.
Recommended use: Laboratory chemicals
Restrictions on use: Not for food, drug or household use

1.3. Supplier

LabChem Inc
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court
Zelienople, PA 16063 - USA
T 412-826-5230 - F 724-473-0647
info@labchem.com - www.labchem.com

1.4. Emergency telephone number

Emergency number: CHEMTREC: 1-800-424-9300 or 011-703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Oxidizing solids Category 3 H272 May intensify fire; oxidizer
Skin corrosion/irritation Category 2 H315 Causes skin irritation
Serious eye damage/eye irritation Category 2A H319 Causes serious eye irritation
Specific target organ toxicity (single exposure) Category 3 H335 May cause respiratory irritation

Full text of H statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US): GHS03 GHS07

Signal word (GHS-US): Warning

Hazard statements (GHS-US): H272 - May intensify fire; oxidizer
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation

Precautionary statements (GHS-US): P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking.
P220 - Keep/Store away from clothing, combustible materials
P221 - Take any precaution to avoid mixing with combustibles
P261 - Avoid breathing dust.
P264 - Wash exposed skin thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear eye protection, protective clothing, protective gloves, face protection.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position...
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comfortable for breathing.
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P362 - Take off contaminated clothing and wash before reuse.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container to comply with local, state and federal regulations

2.3. Other hazards which do not result in classification
Other hazards not contributing to the classification : None.

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances
Substance type : Mono-constituent

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Nitrate</td>
<td>(CAS-No.) 7757-79-1</td>
<td>100</td>
<td>Ox. Sol. 3, H272 Eye Irrit. 2, H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2A, H319</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3, H335</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures
Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures
First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact : Rinse with water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.
First-aid measures after eye contact : Rinse with water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.
First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Victim is fully conscious: immediately induce vomiting. Induce vomiting by giving a 0.9 % saline solution. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Doctor: administration of chemical antidote.

4.2. Most important symptoms and effects (acute and delayed)
Symptoms/effects after inhalation : AFTER INHALATION OF DUST: Dry/sore throat. Coughing. Irritation of the respiratory tract.
Symptoms/effects after skin contact : Red skin. ON CONTINUOUS EXPOSURE/CONTACT: Tingling/irritation of the skin.
Symptoms/effects after eye contact : Redness of the eye tissue. ON CONTINUOUS EXPOSURE/CONTACT: Irritation of the eye tissue.

4.3. Immediate medical attention and special treatment, if necessary
No additional information available
**SECTION 5: Fire-fighting measures**

### 5.1. Suitable (and unsuitable) extinguishing media

**Suitable extinguishing media:** Adapt extinguishing media to the environment.

**Unsuitable extinguishing media:** No unsuitable extinguishing media known.

### 5.2. Specific hazards arising from the chemical

**Fire hazard:** DIRECT FIRE HAZARD. Non combustible. INDIRECT FIRE HAZARD. Promotes combustion. Reactions involving a fire hazard: see "Reactivity Hazard".

**Explosion hazard:** DIRECT EXPLOSION HAZARD. No data available on direct explosion hazard. INDIRECT EXPLOSION HAZARD. No data available on indirect explosion hazard.

**Reactivity:** Decomposes on exposure to temperature rise: release of oxygen. On burning: release of toxic and corrosive gases/vapours (nitrous vapours). Violent to explosive reaction with many compounds e.g.: with organic material, with combustible materials, with (some) metals and their compounds and with (strong) reducers. Reacts with (some) acids: release of toxic and corrosive gases/vapours (nitrous vapours).

### 5.3. Special protective equipment and precautions for fire-fighters

**Precautionary measures fire:** Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

**Firefighting instructions:** Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray.

**Protection during firefighting:** Heat/fire exposure: compressed air/oxygen apparatus.

**SECTION 6: Accidental release measures**

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel


**Emergency procedures:** Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Keep containers closed. Wash contaminated clothes. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation.

**Measures in case of dust release:** In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Prevent spreading in sewers.

### 6.3. Methods and material for containment and cleaning up

**For containment:** Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray. If reacting: dilute toxic gas/vapour with water spray. Take account of toxic/corrosive precipitation water.

**Methods for cleaning up:** Prevent dispersion by covering with dry sand/earth. Scoop solid spill into closing containers. See "Material-handling" for suitable container materials. Spill must not return in its original container. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

### 6.4. Reference to other sections

No additional information available

**SECTION 7: Handling and storage**

### 7.1. Precautions for safe handling

**Precautions for safe handling:** Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Keep the substance free from contamination. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Avoid raising dust. Keep away from naked flames/heat. Observe normal hygiene standards. Keep container tightly closed. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.
7.2. Conditions for safe storage, including any incompatibilities

- **Storage temperature**: 20 °C
- **Heat-ignition**: KEEP SUBSTANCE AWAY FROM: heat sources.
- **Prohibitions on mixed storage**: KEEP SUBSTANCE AWAY FROM: combustible materials, reducing agents, strong acids, metals, organic materials.
- **Storage area**: Store in a dry area. Fireproof storeroom. Detached building. Meet the legal requirements.
- **Special rules on packaging**: SPECIAL REQUIREMENTS: closing, clean, correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
- **Packaging materials**: SUITABLE MATERIAL: synthetic material, glass. MATERIAL TO AVOID: wood.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls: Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure.

8.3. Individual protection measures/Personal protective equipment

**Personal protective equipment:**


**Materials for protective clothing:**

GIVE GOOD RESISTANCE: butyl rubber, neoprene, rubber. GIVE POOR RESISTANCE: natural fibres

**Hand protection:**

- Gloves

**Eye protection:**

- Safety glasses. In case of dust production: protective goggles

**Skin and body protection:**

- Protective clothing

**Respiratory protection:**

- Dust production: dust mask with filter type P2

**Thermal hazard protection:**

- None necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- **Physical state**: Solid
- **Appearance**: Crystalline solid, crystalline powder
- **Color**: Colourless-white
- **Odor**: Odorless
- **Odor threshold**: No data available
- **pH**: 6 - 8 (5%)
- **pH solution**: 5%
- **Melting point**: 334 °C
- **Freezing point**: No data available
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Boiling point: Not applicable
Flash point: Not applicable
Relative evaporation rate (butyl acetate=1): No data available
flammability (solid, gas): No data available
Vapor pressure: No data available
Relative vapor density at 20 °C: 3
Relative density: 2.1
Specific gravity / density: 2100 kg/m³
Molecular mass: 101.1 g/mol
Solubility: Soluble in water. Soluble in glycerol.
Water: 32 g/100ml
Ethanol: 0.16 g/100ml
Log Pow: No data available
Auto-ignition temperature: Not applicable
Decomposition temperature: 400 °C
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosion limits: No data available
Explosive properties: No data available
Oxidizing properties: May intensify fire; oxidiser.

**SECTION 10: Stability and reactivity**

10.1. Reactivity
Decomposes on exposure to temperature rise: release of oxygen. On burning: release of toxic and corrosive gases/vapours (nitrous vapours). Violent to explosive reaction with many compounds e.g.: with organic material, with combustible materials, with (some) metals and their compounds and with (strong) reducers. Reacts with (some) acids: release of toxic and corrosive gases/vapours (nitrous vapours).

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No additional information available

10.4. Conditions to avoid

10.5. Incompatible materials
Combustible materials. Strong reducing agents.

10.6. Hazardous decomposition products
Nitrogen oxides. Oxygen.

**SECTION 11: Toxicological information**

11.1. Information on toxicological effects
Likely routes of exposure: Inhalation; Skin and eye contact
Acute toxicity: Not classified

<table>
<thead>
<tr>
<th>Potassium Nitrate (7757-79-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>ATE US (oral)</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/irritation</td>
<td>Causes serious eye irritation. pH: 6 - 8 (5 %)</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity – single exposure</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>Specific target organ toxicity – repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
<tr>
<td>Symptoms/effects after inhalation</td>
<td>AFTER INHALATION OF DUST: Dry/sore throat. Coughing. Irritation of the respiratory tract.</td>
</tr>
<tr>
<td>Symptoms/effects after skin contact</td>
<td>Red skin. ON CONTINUOUS EXPOSURE/CONTACT: Tingling/irritation of the skin.</td>
</tr>
<tr>
<td>Symptoms/effects after eye contact</td>
<td>Redness of the eye tissue. ON CONTINUOUS EXPOSURE/CONTACT: Irritation of the eye tissue.</td>
</tr>
<tr>
<td>Chronic symptoms</td>
<td>ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation.</td>
</tr>
</tbody>
</table>

## SECTION 12: Ecological information

### 12.1. Toxicity
- **Ecology - air**: Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
- **Ecology - water**: Mild water pollutant (surface water). Ground water pollutant. Maximum concentration in drinking water: 50 mg/l (nitrate) (Directive 98/83/EC). Not harmful to fishes (LC50(96h) >1000 mg/l). Slightly harmful to invertebrates (Daphnia) (EC50 (48h): 100 - 1000 mg/l). May cause eutrophication. Slightly harmful to plankton (EC50: 100 - 1000 mg/l).

<table>
<thead>
<tr>
<th>Potassium Nitrate (7757-79-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 2</td>
</tr>
<tr>
<td>LC50 other aquatic organisms 2</td>
</tr>
</tbody>
</table>

### 12.2. Persistence and degradability
- **Potassium Nitrate (7757-79-1)**
  - Persistence and degradability: Biodegradability: not applicable.
  - Biochemical oxygen demand (BOD): Not applicable
  - Chemical oxygen demand (COD): Not applicable
  - ThOD: Not applicable

### 12.3. Bioaccumulative potential
- **Potassium Nitrate (7757-79-1)**
  - Bioaccumulative potential: No bioaccumulation data available.

### 12.4. Mobility in soil
- No additional information available

### 12.5. Other adverse effects
- No additional information available
### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

| Waste disposal recommendations | Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Precipitate/make insoluble. Remove to an authorized dump (Class I). Do not discharge into surface water. |

| Additional information | LWCA (the Netherlands): KGA category 05. Hazardous waste according to Directive 2008/98/EC. |

### SECTION 14: Transport information

<table>
<thead>
<tr>
<th>Department of Transportation (DOT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In accordance with DOT</td>
</tr>
<tr>
<td>Transport document description</td>
</tr>
<tr>
<td>UN-No.(DOT)</td>
</tr>
<tr>
<td>Proper Shipping Name (DOT)</td>
</tr>
<tr>
<td>Packing group (DOT)</td>
</tr>
<tr>
<td>Hazard labels (DOT)</td>
</tr>
</tbody>
</table>

| DOT Packaging Non Bulk (49 CFR 173.xxx) | 213 |
| DOT Packaging Bulk (49 CFR 173.xxx) | 240 |
| DOT Special Provisions (49 CFR 172.102) | A1 - Single packaging are not permitted on passenger aircraft. A29 - Combination packaging consisting of outer expanded plastic boxes with inner plastic bags are not authorized for transportation by aircraft. IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2). IP3 - Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner. T1 - 1.5 178.274(d)(2) Normal............. 178.275(d)(2) TP3 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter. W1 - This substance in a non friable prill or granule form is not subject to the requirements of this subchapter when tested in accordance with the UN Manual of Test and Criteria (IBR, see §171.7 of this subchapter) and is found to not meet the definition or criteria for inclusion in Division 5.1. |
| DOT Packaging Exceptions (49 CFR 173.xxx) | 152 |
| DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) | 25 kg |
| DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) | 100 kg |
| DOT Vessel Stowage Location | A - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel. |
| Other information | No supplementary information available. |
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SECTION 15: Regulatory information

15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Potassium Nitrate (7757-79-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
<tr>
<td>SARA Section 313 - Emission Reporting 1 % Nitrate compounds (water dissociable)</td>
</tr>
</tbody>
</table>

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

CANADA

<table>
<thead>
<tr>
<th>Potassium Nitrate (7757-79-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listed on the Canadian DSL (Domestic Substances List)</td>
</tr>
</tbody>
</table>

EU-Regulations

No additional information available

National regulations

<table>
<thead>
<tr>
<th>Potassium Nitrate (7757-79-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not listed on the Canadian IDL (Ingredient Disclosure List)</td>
</tr>
</tbody>
</table>

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Revision date: 02/13/2018

Full text of H-phrases: see section 16:

- **H272**: May intensify fire; oxidizer
- **H315**: Causes skin irritation
- **H319**: Causes serious eye irritation
- **H335**: May cause respiratory irritation

NFPA health hazard: 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard: 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity: 0 - Material that in themselves are normally stable, even under fire conditions.

Hazard Rating

- **Health**: 1 Slight Hazard - Irritation or minor reversible injury possible
- **Flammability**: 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)
- **Physical**: 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

Personal protection: F

F - Safety glasses, Gloves, Synthetic apron, Dust respirator

SDS US LabChem

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